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# *Isostigma sparsifolium* (Asteraceae, Heliantheae, Coreopsidinae), a New Species from Goiás, Brazil

Guadalupe Peter

Laboratorio de Plantas Vasculares, Universidad Nacional del Sur, San Juan 670,  
B8000ICN Bahía Blanca, Argentina. gpeter@criba.edu.ar

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**ABSTRACT.** A new species, *Isostigma sparsifolium* G. Peter, from central Brazil (State of Goiás), resembles *I. brasiliense* (Gardner) Benth & Hooker f. in habit; both species are perennial, with stems branched at the base, ascendant, with peduncles erect, involucre bell-shaped, capitula up to 9 mm high and 12 mm in diameter, and the pappus aristae completely hispid. Nevertheless, *I. sparsifolium* can be distinguished by its pinnatisect leaves distributed along the stems, the stems winged, the peduncles shorter, and the ray corollas white.

**RESUMEN.** Una nueva especie, *Isostigma sparsifolium* G. Peter, de Brasil central (Estado de Goiás), es similar a *I. brasiliense* (Gardner) Benth & Hooker f. en hábito; ambas especies son perennes, con tallos ramificados en la base, ascendentes, con pedúnculos erectos, involucros acampanados, capítulos hasta 9 mm alt. y 12 mm diam., y las aristas del pappus completamente híspidas. *Isostigma sparsifolium* puede ser distinguida por sus hojas pinnatisectas distribuidas a lo largo de los tallos, tallos alados, pedúnculos más cortos, y corolas de las flores del radio blancas.

**Key words:** Asteraceae, Brazil, Coreopsidinae, Heliantheae, *Isostigma*, IUCN Conservation Status.

During a revision of *Isostigma* Lessing, indeterminate material from Brazil was found. This material does not correspond with any previously described species and belongs to a new species. It is added to the known Brazilian species: *I. brasiliense* (Gardner) Benth & Hooker f., *I. crithmifolium* Lessing, *I. peucedanifolium* (Sprengel) Lessing, *I. riedelii* (Baker) Chodat, *I. scorzonrifolium* (Baker) Sherff, *I. simplicifolium* Lessing, and *I. speciosum* Lessing.

*Isostigma* (Asteraceae, Heliantheae, Coreopsidinae) is considered to be akin to *Chrysanthellum* Richard and *Glossocardia* Cassini (Ryding & Bremer, 1992; Karis & Ryding, 1994). *Isostigma* is a scarcely studied assemblage of 11 to 13 species (Sherff, 1926, 1931; Cabrera, 1959; Peter, 2005) of perennial herbs and subshrubs distributed in northeastern and central Argentina, southern Brazil, southeastern and central Bolivia, Paraguay, and northwestern Uruguay. *Iso-*

*stigma* includes plants with stems simple or scarcely branched, striate, glabrous; leaves rosulate or distributed along the stems, entire with the apex entire or dentate, pinnate to multipinnatisect; capitula bell-shaped or cylindric, solitary or in pseudocorymbs; phyllaries in three to four rows, with margins hyaline and ciliate; receptacles flat, alveolate, with paleae membranous, keeled at the base; ray florets generally present, pistillate, with corollas 2- to 3-toothed, yellow, white, or purple; disc florets bisexual, with corollas tubular, 4- to 5-lobate; anthers obtuse with appendages ovate; styles with two branches, papillose on the inner face, with filiform appendages, covered by hairs on the outer face; cypselae linear, flattened, glabrous or hispid; pappus 2-aristate to null, aristae triangular or acicular, divergent or erect, smooth or hispid.

***Isostigma sparsifolium* G. Peter, sp. nov.** TYPE: Brazil, Goiás: 37 km NW of Itumbiara on rd. to Rio Verde, 2 Feb. 1959, H. S. Irwin 2543 (holotype, F; isotypes, TEX, UC not seen). Figure 1.

Haec species *I. brasiliensi* similis, sed caulibus alatis, foliis sparsis alternis pinnatisectis, pedunculis foliatis 3–9 cm longis, corollis marginalibus albis differt.

*Perennials* 10–15 cm tall, glabrous; *stems* branched from bases, ascending, leafy, with narrow hyaline wings. *Leaves* usually alternate, rarely opposite, 15–30 mm long, pinnatisect, bases semiamplexicaul, leaflets 1 to 3 pairs, filiform 5–30 × 0.2 mm, margins hyaline, ciliate at bases. *Heads* solitary, axillary and terminal, 7–8 × 13–20 mm in flower, 7–8 × 6–9 mm in fruit; *peduncles* erect, leafless or leafy at bases, 30–90 × 0.5–1.5 mm; *involucre* bell-shaped to hemispheric, 3–4 × 4–5 mm. *Receptacles* alveolate, *paleae* 3- to 5-nerved, yellow, linear to narrowly obovate, 3.5 × 0.7 mm, membranous, keeled, veins with glandular trichomes, margins erose, apices acute, rounded, or mucronate. *Phyllaries* brown, in 3 series, scarious, margins hyaline, ciliate; outer triangular, 1–1.7 × 0.5 mm, apices acute; inner triangular to narrowly ovate, 2–4 × 0.8–1 mm,



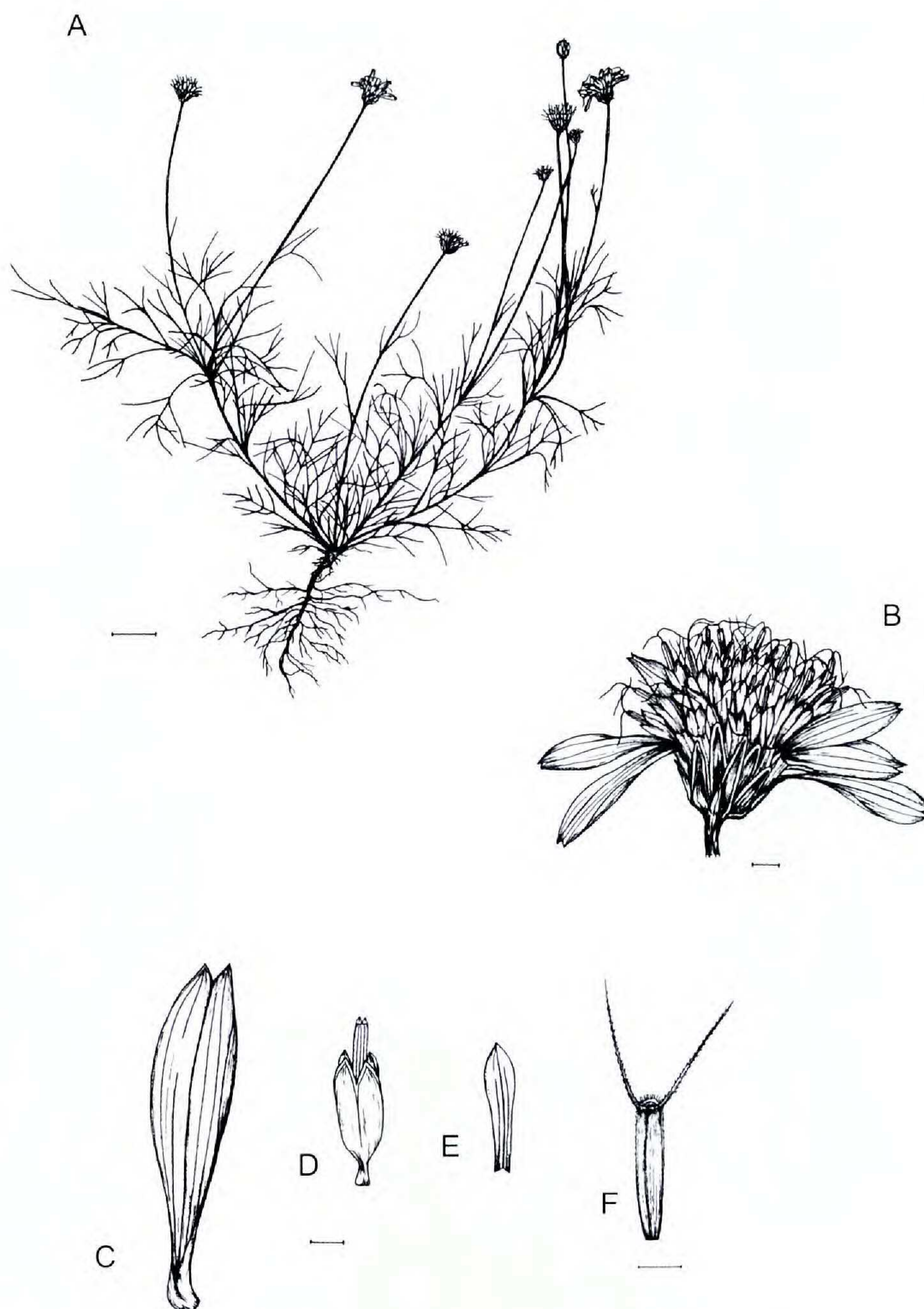


Figure 1. *Isostigma sparsifolium* G. Peter. —A. Habit. —B. Capitulum with florets. —C. Ray corolla. —D. Disc floret (style removed).—E. Palea. —F. Cypsel. Scale bars: A = 1 cm; B–F = 1 mm. Drawn from the holotype *Irwin 2543* (F).

apices acute, rounded, or mucronate; *ray florets* pistillate; corollas white with brown nerves, tubes 0.5 mm long, laminae elliptic or obovate, 6–9 × 1.5–3.5 mm, 4- to 5-nerved, teeth 2, 1–1.5 mm long, acute or rounded; *disc florets* bisexual, corollas yellow with brown veins, tubes 0.7–1 mm long, limbs abruptly broadened, 2–4 mm long, glabrous, lobes 4, 0.7–1 mm long, acute; anthers 1.5–2 mm long; style appendages 2 mm long. *Cypselae* yellow, brown, or black, linear, flattened or trigonous, 3–3.5 × 0.5–0.7 mm, striate, midribs conspicuous, hispid distally (on margins, apices, or ribs); *pappus* a ciliate crown and 2 acicular, erect or divergent, hispid aristae 2–4 mm long.

*Etymology.* The specific epithet of the new taxon refers to the distribution of leaves along the stems, in contrast to the rosulate leaves of the morphologically closest species, *Isostigma brasiliense*.

*Distribution and habitat.* *Isostigma sparsifolium* is known only from the state of Goiás, in central Brazil. It grows among grasses in forest clearings on brown sandy soils. This species is only known from its type locality, and there is no information about its current status. Due to that, its IUCN Conservation Status should be DD (Data Deficient) (IUCN, 2005).

*Isostigma sparsifolium* is closely related to *I. brasiliense*. Both species are perennial herbs or subshrubs, with stems branched at the base, ascendant, with erect peduncles, involucre bell-shaped, capitula up to 9 mm high and 12 mm diam., and with completely hispid pappus aristae. The new taxon is distinguished from *I. brasiliense* by its pinnatisect leaves distributed along the stems (vs. leaves pinnatisect or simple, rosulate at the base of the peduncle), winged stems (vs. stems wingless), peduncles 3–9 cm long (vs. 8–25 cm long), ray corollas white (vs. yellow



ray corollas), and the pappus of a ciliate crown between two aristae (vs. only the two aristae).

The type specimen of *Isostigma sparsifolium*, Irwin 2543, was previously determined as *I. impala*, nom. nud., by Smith and Turner (1975), in a work about Kranz syndrome in Asteraceae. Nevertheless, this name was not accompanied by any description; furthermore, these researchers did not mention it as belonging to a new species.

#### KEY TO THE BRAZILIAN SPECIES OF *ISOSTIGMA*

- 1a. Capitula in pseudocorymbs . . . . .  
 . . . . . *I. scorzonrifolium* (Baker) Sherff
- 1b. Capitula solitary.
- 2a. Leaves entire, dentate, or briefly furcate at the apex.
- 3a. Leaves subulate or filiform, 5–70 × 0.2–0.5 mm; apex acute or mucronate; rosulate at bases of peduncles; capitula up to 12 mm diam.; ray corollas yellow; cypselae hispid . . . . .  
 . . . . . *I. brasiliense* (Gardner) Benth. & Hooker f.
- 3b. Leaves linear, 50–450 × 1.5–9 mm, apex entire, acute, rounded, mucronate, 3-dentate or 3-furcate; rosulate at bases of stems; capitula wider than 13 mm; ray corollas purple; cypselae glabrous.
- 4a. Stems isodiametric all along, 4- to 7-bracteolate distally; capitula 10–15 × 13–19 mm; involucre 8 × 13–15 mm . . . . . *I. simplicifolium* Lessing
- 4b. Stems generally expanded at bases of capitula, 20- to 50-bracteolate distally; capitula 12–30 × 20–60 mm; involucre 10–12 × 18–40 mm . . . . . *I. riedelii* (Baker) Chodat
- 2b. Leaves divided.
- 5a. Leaves distributed along the stems; ray corollas white . . . . . *I. sparsifolium* G. Peter
- 5b. Leaves rosulate; ray corollas yellow or purple.
- 6a. Leaves rosulate at bases of peduncles; subshrubs up to 35 cm; ray corollas yellow . . . . .  
 . . . . . *I. brasiliense* (Gardner) Benth. & Hooker f.
- 6b. Leaves rosulate at bases of stems; herbs to 2 m; ray corollas purple.
- 7a. Stems expanded at bases of capitula (4–7 mm wide), more than 20-bracteolate distally . . . . .  
 . . . . . *I. speciosum* Lessing

- 7b. Stems isodiametric all along (up to 3 mm at bases of capitula), fewer than 10-bracteolate distally.
- 8a. Leaves pinnatisect to multipinnatisect, leaflets subulate or filiform, 0.2–0.7 mm wide; petioles and leaflets canaliculate . . . . .  
 . . . . . *I. peucedanifolium* (Sprengel) Lessing
- 8b. Leaves pinnatisect or bipinnatisect, leaflets linear, 0.5–1.3 mm wide; petioles and leaflets flat. . . . .  
 . . . . . *I. crithmifolium* Lessing

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